

THE WORLD OF TO-DAY

INCREASED PRODUCTION

Phraim BY
E. LIPSON, M.A.
New College, Oxford

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INCREASED PRODUCTION

THE WORLD OF TO-DAY

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INCREASED PRODUCTION

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Author of "The Economic History of England: Middle Ages"; "The History of the English Woollen and Worsted Industries"; etc.

"Material wealth exists for the sake of man, and not man for the sake of material wealth." A. MARSHALL,
Principles of Economics, Book vi.

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INCREASED PRODUCTION

CHAPTER I.

THE IMPORTANCE OF INCREASED PRODUCTION.

Throughout the nineteenth century the workers of this country were engaged in a strenuous struggle to raise the standard of life and to improve their social and economic conditions. Their efforts were warmly seconded by social reformers, inspired with the belief that the foundations of society rest ultimately upon the physical and material well-being of the workers ; and their claims are now fortified by the authority of modern economists, who recognise that the indispensable basis of a sound economic order is a healthy and contented working community. Thus the demand of the workers for better conditions of life receives to-day widespread support : alike on the part of those who contemplate a state of society in which the horn of plenty will become the possession of the many instead of being the privilege of the few, and on the part of those who realise the folly of trying to extract honey while pining the bees. Educational reformers who desire to create an intelligent and thinking community, religious teachers who seek to inculcate the principles of a higher morality, lovers of art who wish to develop in every human being an appreciation of the beautiful, will all find their aspirations soonest realised by co-operating in the solution of the fundamental problem of the age : the improvement of the economic position of the workers.

The demand of the workers for a better existence has developed with irresistible force owing to the war, which has changed the outlook of countless men and women. In the first place it has given them a vision

of better things, and dispelled the apathy and inertia which submit to unsatisfactory conditions because nothing better is known. During the war enormous numbers of men were better fed and better clothed than ever they were before, while the separation allowances enjoyed by their wives and families were greatly in excess of anything which they had previously handled. In fact, we are in a situation to-day not unlike that which existed in England nearly six centuries ago, when the Black Death brought home to the English peasantry the economic and social degradation of their position, and the employers eventually were forced to succumb to the unwillingness of the labourers to return to the old conditions. The unique experience of the war is bound to exercise a permanent influence over the thought and lives of the present generation, and it lies at the root of the demand for a radical improvement in the existing condition of affairs. In the next place, there is a greater disposition on the part of the nation at large to recognise the justice of this demand for improved conditions. The war generated unstinted enthusiasm and admiration for the men who endured the hardships of the trenches and daily confronted death with so much devotion and courage. There was a universal feeling that these men ought not to be required to accept the miserable pittance earned by hundreds of thousands of men before the war. Although some of this feeling may have evaporated in the return to normal conditions, the conscience of society has been awakened and public opinion is clearly ripe for the State to assume larger responsibilities in the direction of safeguarding the interests and welfare of the industrial masses.

The purpose of this book is to discuss how the workers can best attain a higher standard of life.* In some quarters the opinion appears to prevail that only one thing is necessary to achieve this end ; namely, to

* The existing industrial order, with modifications, is assumed throughout. A discussion of Socialism lies outside the scope of this book.

alter the present distribution of wealth. Once the workers are given a larger share of the wealth now being produced, the social problem, it is thought, will solve itself. There are undoubtedly the most glaring evils in the existing distribution of wealth, which cannot be defended on grounds either of equity or social expediency ; and the workers therefore have every right to a larger share of the wealth they help to produce. But even if all the wealth in the country were shared out equally, it would not solve the social problem. The amount per head of the population would prove very small, particularly after the necessary deductions had been made for communal saving in order to provide capital for the creation of further wealth. No scheme of distribution, however ideal, will *by itself* give to every man and woman the means of a proper standard of life. The fact must be fairly faced that the present production of wealth is insufficient for the needs of the community as a whole. It is true that this insufficiency itself arises, in part, from the unequal distribution of wealth, and further, the industrial resources of the community are not always directed into the best channels. We shall return to these points later* ; here we are content to notice that the removal of the existing inequalities of wealth will only partially solve the social problem. Unless there is enough to go round, no scheme of distribution will give everyone an adequate share. To make the whole community equal partners in poverty may satisfy an abstract sense of justice, but it is not the best way of raising up those who are now in a distressed condition. It would simply throw to the winds all that has been gained by a portion of the community, including large sections of the organised workers themselves. Distribution and production, in fact, may be compared to two blades of a pair of scissors ; each is necessary to the other, and a fairer system of distribution, important though it is, must go hand in hand with an increased production of wealth.

* See pp. 25 and 26.

In the same way no amount of juggling with the currency will go to the root of present industrial discontents. Unless an increase in the currency is accompanied by an increase in production, the only result is to inflate prices. Money is merely a medium of exchange, and the only way to add to the wealth of a community is to increase its output of commodities.

Assuming, then, the necessity for increased production, we must consider, in turn, the following problems :—
(1) the kinds of commodities which ought to be produced ;
(2) the obstacles at the present moment to increased production ; (3) the methods of increased production.

THE OBJECTS OF PRODUCTION.

The end of all production is consumption. Things are produced in order that they may be consumed either directly or indirectly. The problem of consumption needs, therefore, much greater attention than is usually devoted to it. It is commonly supposed that a man has the right to spend his income freely as he pleases, but this is a mistaken point of view. He who possesses money possesses economic power, and determines the channels into which the productive forces of the community are to be diverted ; his demand for commodities is, in this sense, unquestionably a demand for labour. It is immoral to use this economic power—whether it is great or small—in a wrong way, just as it is immoral to use any kind of power wrongly. The indiscriminate destruction of wine glasses, to take a familiar example, may be considered good for trade ; actually, it diverts labour and capital from making necessities into making luxuries. The more that capital and labour are set free from the luxury trades, the more they become available for non-luxury trades, and as a result the necessities of life are rendered more abundant and cheaper. The argument that all expenditure of money finds work for someone overlooks the fact that the interests of the individual and of the community are not necessarily identical. The game-keeper is not so useful to the community at large as an

agricultural labourer ; the community can dispense with the former, but the services of the latter are vital to its very existence. All building operations find work for the building trades, but it is more important to employ men on houses for the workers—and so to promote their health and efficiency—than on “luxury buildings.” In short, the problem of increased production cannot be divorced from the kindred problem of consumption. If only the right kinds of things are consumed, only the right kinds of things will be produced ; and all labour will become productive in the truest sense of the term, because it will be devoted to the proper ends. Increased production will not benefit the community unless it is wisely directed ; indeed, it is likely to be even more fruitful of harm than of good.

What is implied in the wise direction of consumption ? Two things may be postulated ; it must conduce to the welfare of the consumer as well as the dignity of the producer. The true needs of consumers and producers must be correctly understood, and as far as possible reconciled, or the plea for increased production will be robbed of most of its force. Take, first, the needs of the producer. Work is not only a task, it is—in due moderation—also a privilege ; it must be regarded in a two-fold aspect as necessary to satisfy our wants and necessary to develop the best that is in us. The most progressive nations are those whose climate imposes upon them the obligation to sustained but not excessive labour, and the individual whose work is at once the source of his livelihood and the joy of his life is the individual most to be envied. This ideal may not yet be attainable for most men, but it ought never to be lost sight of. Any form of production which degrades the worker engaged in it should be discouraged, whatever may be the immediate gain to the consumer.

It would be impossible to enumerate all the needs of the consumer. Human wants are infinite in their variety ; progress consists, indeed, in creating new wants, just as enlightened progress consists in elevating the nature of our wants. But we may make at once a distinction

between necessities, comforts, and luxuries. The primary necessities of life are food, clothing, shelter and firing, yet these suffice only for bare subsistence. There are other things which may be classed as "comforts," but which are certainly "decencies" and almost necessities. They are not necessary to support existence, but they are necessary to maintain efficiency. Education, change, variety in diet, recreation, all these are the indispensable conditions of physical and mental vigour. The question of luxuries is not easily solved. At a time when there is a shortage of necessities, one's first instinct is to condemn all luxuries, yet the imposition of an indiscriminate ban upon luxuries would simply check economic progress. Most of our "necessaries," and certainly all our "comforts," originated as "luxuries," until they came into general use. On the other hand, there are some kinds of luxuries—extravagance in food and dress, excess of servants, and so forth—in which general indulgence is neither possible nor desirable. These forms of expenditure ought certainly to be discouraged. They not only involve a misdirection of energy—a diversion of the national resources into wrong channels—but they have a deplorable moral effect. It is impossible to convince the workers that the war has caused an enormous destruction of wealth, which can only be made good by hard work, when on every side they see wealth rioting in its riches. How we can best discourage unwise expenditure is a difficult problem. Something can be done by means of sumptuary legislation prohibiting those manifestations of extravagance which, in the present circumstances, ought not to be tolerated; another device is taxation of luxuries; but the true remedy lies partly in treating the problem of consumption as an ethical problem—educating the community to regard all forms of extravagance and waste as immoral—and partly in raising the standard of life of the workers in order to ensure a steady and regular demand for necessities and comforts.

All production involves effort or sacrifice. To the fortunate ones of the earth—those who love their work

for its own sake—labour is doubtless its own reward, and even those who are engaged in minding machines would mostly prefer some work to the intolerable tedium of idleness. But after a certain point there arises an increasing “disutility of labour,” in which the effort or sacrifice outweighs the gain. Accordingly the community must measure the cost of increased production by the effect of the exertions demanded on the character of the workers. An increase in wages would be too dearly purchased if it impaired the health of the worker or deprived him of leisure.* In short, increased production is not an end in itself, but a means to an end—the health and happiness of the whole community—and it would be the height of folly, for the sake of the means, to demand a degree of effort and sacrifice which would prevent the consummation of the end nominally sought. With this proviso we may say that the fundamental object of increased production should be to enable every member of the community to satisfy his legitimate desires in the shape of food, clothing, shelter, firing, recreation, and other essential needs. If increased production fulfils these objects, it will help to create a happier race of men and women. The workers have every right to demand the most absolute guarantees that increased production will not have the effect of making the rich richer and the poor poorer, but will bring prosperity to every section of the community. This is an aspect of the question to which it will be necessary to return.†

THE OBSTACLES TO INCREASED PRODUCTION.

The responsibility for restricted output attaches partly to capital and partly to labour. There are said to be more than five hundred associations of producers in the United Kingdom, “all exerting a substantial influence on the course of industry and price.”‡ The benefits of combination are undoubtedly considerable. None the

* The worker may prefer to take his share of increased prosperity in the shape of more leisure rather than in the shape of higher wages.

† See pp. 22, 24.

‡ Cd. 9236 (1919), p. 20.

less, as is pointed out in the *Report of the Committee on Trusts*, "it is obvious that a system which creates virtual monopolies and controls prices is always in danger of abuse." It has been definitely ascertained that one of the purposes of trusts is the regulation of output, or—as they prefer to term it—to prevent over-production. "In general it is found that the formation of a combination or agreement is attended by a 'regulation' of output and an actual rise of prices, due to the fact that most of the organisations control articles or services so essential to the community that the elasticity of demand is slight." One federation of firms is engaged in the manufacture of an article of furniture. Each firm is assigned a percentage of the total output, and a penalty is imposed upon those whose output is in excess. Any firm which produces less than its assigned percentage receives compensation from the pool. According to this arrangement, which "*was found to be common to a great many of the associations*," the firms which increase their output must actually subsidise the firms which deliberately restrict their output. In the case of another association, "covering 99 per cent. of the total British output of an important steel product," the "curious result" followed that "one firm that joined the association had entirely ceased to manufacture from that time, but had ever since continued to draw a handsome income from the pool." Even in cases where trusts do not actually regulate the output their control of prices produces ultimately the same result. In the long run demand is determined by price, and the control of prices reduces the "effective" demand of the consumer and so restricts the output, just as the regulation of output leads directly to a limitation of the supply. The results of this policy may be illustrated from the history of the tinplate industry. The Americans determined to establish a domestic industry. The English makers retorted by setting up a Board of Control to reduce output and keep up prices, "although the high prices of 1890 had supplied Americans with one of the chief arguments for the creation of a

domestic industry."* "The effort," wrote *The Iron and Steel Trades Journal*, "to force up prices by a combination to restrict the make and cause a scarcity, seems to us to be playing into the hands of the American works. By all means let those makers who cannot produce at present prices stop their mills, but to tie the hands of those who are content with a small percentage of profits in a big turnover is neither wise nor fair." Eventually the expansion of the market at home and the creation of new markets abroad supplied the loss of the American market. The incident taught the lesson that the retention of a market does not depend on high prices and artificial scarcity; it depends rather on cheapening the cost of production by introducing new processes and increasing the efficiency of the workers and the management.

Apart from the deliberate manipulation of production on the part of trusts, an important cause of restricted output at the present moment is the unsettled state of Europe. The Continental markets are hopelessly dis-organised by the war, and the disturbances in Eastern Europe prevent a return to normal conditions. The resumption of trade relations with Russia, and the restoration of the financial stability of Central Europe, are vital to our own economic preservation. This is a province in which wise statesmanship can do much to heal the wounds of the war, and bring back happiness to a distracted world.

The basis of production is labour, and without the willing co-operation of the worker increased production is manifestly impossible. It is, therefore, important to ascertain the reasons why labour appears to be withdrawing itself from active co-operation in the work of production. Labour unrest is undoubtedly a prominent cause of under-production. The discontent of the workers finds expression in strikes, in threats of strikes, and in the absence of willing co-operation. Circumstances

* Macrosty, *The Trust Movement in British Industry* p. 73.

may arise in which the workers are compelled to suspend work in order to secure redress of grievances, but strikes spell disaster for the community.* Mr. Webb has well summed up their effects: "The lying idle of costly and perishable machinery and plant, the dislocation of business enterprise, the diversion of orders to other countries, the absorption in angry quarrels of the intellects which would otherwise be devoted to the further development of our industry—above all, the reduction to poverty and semi-starvation of thousands of workmen—involve a serious inroad upon the nation's wealth." Even where strikes are not actually declared, the threat of a strike has an unsettling influence upon industry: the uncertainty of the outlook discourages the investment of capital and deters employers from opening up new enterprises, while the restless mood of the men is detrimental to their output.

One of the root causes of labour discontent at the present day is high prices. The workers find themselves handling more money, but the cost of living has reduced its value to forty per cent.† They are asked to work harder but find that the more they earn the more prices appear to soar. Their irritation at a state of affairs which is attributed to the malign influence of profiteers, coupled with a closer acquaintance than is sometimes imagined with the dividends declared by companies, helps to create the labour unrest which makes the workers unwilling to pull their full strength in the work of production. Happily, there are some grounds for the belief that prices are now on a downward grade.

In some cases, again, it is possible that "dislike of the present system" is the cause of "a fall in average output and in intensity of work." The dissatisfaction of the

* From 1900-1920 there were 2,812 strikes and lock-outs in the mining industry over wages, hours and conditions of employment: Hodges, *Nationalization of the Mines*, p. 80.

† In the case of some commodities the fall in the value of money is even greater.

workers, " or the dissatisfaction of an effective proportion among them, with capitalist production, is reaching a point at which it seriously interferes with the further conduct of industry along the traditional lines."* There is reason to doubt, however, whether labour is really becoming " a wasting asset," that is, whether any effective proportion of the workers are actually diminishing their energy in production from hostility to the existing industrial system. There are doubtless some who think that, through under-production, they will make the present system unworkable. Like the older school of Russian Revolutionaries, they may believe that the worse things now are the sooner—and the more complete—will be the crash. This kind of policy can only be described as a policy of despair ; at best it would be justified only in a country where the bayonet ruled supreme and constitutional action was impossible. The great mass of the community have not the staying power for such a trial of strength, or rather of endurance. Under-production means for the wealthier section of the community, at most, a curtailment of expenditure on luxuries, for the majority of the people it means deprivation of the necessities of life.

We have suggested that one cause of under-production is a not unnatural feeling of irritation at the high cost of living. Another factor in the situation is the psychological reaction which has followed the war. People want to have " a better time " ; they cannot easily return to the old habits of methodical work. This phase is doubtless temporary, but it helps to account in part for under-production. Moreover, in the case of the mining industry—and the same is doubtless true of other industries—a large number of ex-Service men have returned to industrial life with impaired health and reduced strength due to wounds or nervous strain. This is another important cause of under-production at the present time. It is temporary in its nature, and as the younger genera-

* Cole, *Chaos and Order in Industry*, p. 220, seq.

tion grows to manhood, this particular factor will disappear.*

The main obstacle to increased production—in so far as the workers are concerned—lies deeper. There is a widespread notion that trade unions encourage a policy of limitation of output, or as it is called *ca' canny* (go slow). It seems impossible to doubt that many workers are wedded to a belief in the doctrine of restricted output, and we may attribute the wide acceptance of this doctrine to three main reasons. The first is the fear that if a worker exerts himself to his full capacity, the extra remuneration earned by him, if any, will not be proportioned to his effort. "Practically all employers," remarks F. W. Taylor,† the principal originator of Scientific Management, "determine upon a maximum sum which they feel it is right for each of their classes of employés to earn per day, whether their men work by the day or piece. Each workman soon finds out about what this figure is for his particular case, and he also realises that when his employer is convinced that a man is capable of doing more work than he has done, he will find sooner or later some way of compelling him to do it with little or no increase of pay." The second reason for "slackening" is physiological, and on this point we cannot do better than cite the *Report of the Ministry of Munitions on Industrial Fatigue and its Causes*: "It is not surprising that where employers, following tradition rather than experiment, have disobeyed physiological law in the supposed interests of gain—and for a century this has been almost universal—the workers have themselves fallen very commonly into a tradition of working below their best during their spells of labour. In so far as hours of work, in excess of those suitable for maximum efficiency, have been imposed during the last two or

* Another cause, temporary in its character, is the shortage of raw material and machinery—the wear and tear of machinery during the period of the war has to be made good.

† *Shop Management*, p. 33. For Scientific Management, see pp. 53, seq.

three generations of modern industry upon the workers, a tradition of slowed labour must necessarily have arisen, probably in large part automatically, as a kind of physiological self-protection. Without some conscious or unconscious slackening of effort, indeed, during working hours of improper length in the past, the output might have been even more unfavourable than we know it to have been for the hours of work consumed.* The third reason, and in some respects the most important, is the belief in the "work fund" theory. We shall discuss this theory in the following paragraphs, reserving for later consideration† problems connected with the remuneration of labour and industrial fatigue.

The "work fund" theory is analogous to the "wages fund" theory which was held by some economists during the first half of the nineteenth century. Just as it was formerly supposed that the amount of capital available for distribution in wages was fixed, many people now think that there is only a certain amount of work to go round, and if any man does more than his fair share, he takes away the work of another man. Industry is conceived not as "a sphere made of elastic material capable of expansion," but as "a sphere of cast-iron in which men struggle for living room"; and it is held wrong for the worker to exert himself above the average level of his fellows or to use up more than his allotted share of the work fund. Hence the rules "one man, one machine," "one mechanic, two labourers," and hence the attempt to limit the amount of work to be done by workers on time wages. It is doubtless true that many trade union rules "are really a species of industrial health legislation extending the principles embodied in the Factory Acts. Especially is this the case with the rules relating to overtime and to the number of workers required for the manning of the various machines. They are essentially protections for the worker against sickness and industrial accident, and

* Cd. 8213 (1916), p. 7.

† See pp. 34 *seq.* and chap. 3.

with their removal will go a big increase in both."* But this explanation does not cover all the facts. During the war some boys fresh from a Board School, on a simple operation, averaged £4 15s. in a normal week and without strain, earned at the same prices at which men had refused to earn more than £2 10s. ; and women were paid £6 to £10 where men had been content with £4 to £5.† It is impossible to resist the conclusion that, in pre-war times, there was a certain amount of deliberate "slacking," partly due to the absence of any guarantee against unemployment and partly inspired by the fear—born of experience—that the workers would not be allowed to earn as much as they could.‡

It is worth while to consider where the principle which underlies the policy of *ca' canny* leads us, if carried to its logical conclusion. It assumes that the less work a man does, the more is left for others. But suppose that all machinery were destroyed and the output of the individual worker were enormously reduced in consequence, would there be still more work for everyone to do ? The result, as we very well know, would be widely different. Prices would rise, consumption would be checked, and the limits of the industry would be reduced to very humble proportions. If the conclusion is a *reductio ad absurdum*, the premisses themselves must be unsound. There is clearly something fundamentally wrong with a system which inspires the worker with the conviction that his salvation lies in the restriction of output.

In order to view the question of *ca' canny* from a fair and dispassionate standpoint we must distinguish between two aspects of the question, the social and the industrial aspect. The policy of *ca' canny*, whatever justification the worker may have,§ is undoubtedly anti-social ; at the

* Cole, *Labour in War Time*, p. 192 ; *Self-Government in Industry*, p. 44.

† *Edinburgh Review*, vol. 229, p. 333.

‡ "Men who were working on piece-work, after learning of the announcement by the Minister of Munitions that under no circumstances would piece-prices be 'cut,' speeded up their output by 120 per cent." *Ibid.*

§ On this point, see pp. 18, 26-7.

moment it may inflict the chief injury on the employer, but it acts like a boomerang in returning the injury on the worker himself as well as on the whole community of fellow workers. To appreciate the importance of this point we must disabuse our minds of the notion that the wealth of a country is, as it were, a mass of stored-up commodities ; it should be conceived, rather, in Professor Marshall's phrase, as "a continuous stream always flowing." Labour is paid out of what labour produces, and anything which checks the uninterrupted flow of commodities diminishes the fund available for distribution among the workers themselves. This does not mean that the worker should overwork in the effort to increase his output, but any rate of production which is below his normal strength, whatever the immediate justification so far as the particular worker himself is concerned, is detrimental to the interests of the community at large.

The use of money is apt to obscure the real nature of economic relationships. As the price of his labour the worker receives a sum of money which we call his wages. The money itself, whether it takes the form of paper or metal currency, satisfies no essential want—it will neither feed, clothe, nor shelter him—but it enables him to obtain the means of satisfying his wants. The important thing is not money but what money buys, and it is in everyone's interest, therefore, that commodities should be abundant and cheap. Now the more production is stinted, the scarcer and dearer commodities become, and to attempt to meet this scarcity and dearness solely by an increase of wages is like attempting to square the circle. If there are only a dozen commodities available for distribution among a dozen persons no juggling with the currency will give each person, on an average, more than one commodity apiece. In short, man does not live on money, but on what money buys ; and high wages will not furnish the means of a high standard of life, except in a community where the standard of production is correspondingly high. The workers are

justified in claiming an adequate share of the increased output in the shape of better wages—and they would be right to demand the most definite safeguards on this point—but an increase in wages is no boon to the worker unless it involves an increase of purchasing power.

Let us picture to ourselves a self-sufficing community consisting of a hundred individuals, each of whom produces a hundred commodities. Assuming that all the commodities had equal value, each individual would be able to purchase in exchange for his own commodities an equal number of other people's commodities. Now suppose the productive power of the community were doubled, every person would produce twice as much, and would, therefore, be able to obtain twice as many things in exchange. In the complicated mechanism of modern industrial society the importance of increased production is not so apparent to the individual worker, but it remains none the less true that, if we take the community as a whole, it is only possible for everyone to obtain twice as much as he now does if everyone has twice as much to give in exchange. Commodities, in fact, are exchanged against commodities, and money is merely the medium through which the transactions are conducted. Hence the more commodities the workers produce, the more commodities will they be able ultimately (in the shape of "real" wages) to obtain in exchange.

The policy of stinting production, whether initiated by the workers or their employers, results in a rise of prices; and this rise is mistakenly regarded as a sign of industrial prosperity. It is really the reverse, since it limits the expansion of trade. The demand for commodities is checked because people either go without or they use substitutes. Professor Jevons tells us that "when the Government of the Two Sicilies placed an exorbitant tax on sulphur—Italy having, as it was thought, a monopoly of native sulphur—our manufacturers soon had resort to the distillation of iron pyrites or sulphide of

iron."* In the same way the Americans were induced to establish their own tinplate industry, largely on account of the high prices in the English industry. When the wages of the Welsh miners depended on the price of coal they sought to keep prices up by restricting output.† "Over production and low wages," declared one of their leaders, "were inseparable"; but experience has demonstrated that increased production brings increased wages in its train. In the case of coal, the folly of limiting output is transparent. Coal is the basis of every industry, and the life-blood of transport. The restriction of output necessarily affects the manufacture of every kind of commodity, and so raises prices to the whole community, including the miners themselves. Further, it deprives us of a valuable commodity which we may exchange abroad for food and raw material, and in this way it increases still further the cost of living. We are not here concerned with the vexed question how far responsibility for the diminished output of coal attaches to the miners or the mine-owners, but there can be no two opinions as to the magnitude of the evil.

We may now sum up this part of the discussion. The policy of stinting production may benefit for a time a particular group of employers or workers, but it is thoroughly anti-social. It raises the price of the product and—in the case of important commodities like machinery or articles of common consumption—the evil effects are felt in every home, and particularly by those whose purses are the slenderest. It reduces, in fact, the purchasing power of every worker in his capacity as a consumer, and diminishes his "real" wages as interpreted in terms of commodities. Ultimately, the consequences of their injudicious action are brought home directly to those responsible, for the stagnant condition of trade, resulting from high prices and falling demand, stimulates foreign rivalry, and the native industry finds itself exposed to the most serious of competitors—an industry organ-

* *The Coal Question*, p. 135.

† *Macrosty, The Trust Movement in British Industry*, pp. 73, 93.

ised on the basis of high wages and low prices made possible by a high rate of production. In another chapter we endeavour to show that high wages need not mean high prices, but the implied condition is that labour and management alike must be efficient.* Experience has shown that the most serious competitors of England are the high-wage countries, but they are also the countries where the rate of production is relatively high. The two things are largely interdependent. No one who looks beyond the narrow circle of his immediate interests to the good of the community as a whole can fail to sympathise with the struggle of the workers to improve their conditions, but the supposition that the standard of life can rise in a community where the standard of production is falling is the most hopeless of illusions. Let the worker demand the maximum possible share in the increased output ; that is the right line of attack ; but any deliberate stinting of production, loitering and dawdling over work, means physical, mental, and moral deterioration ; physical, because it means a reduced command over the necessities of life ; mental, because it stultifies the intelligence ; moral, because it is dishonest and destroys character.

We must now look at the question of production from another angle. We have argued that, in the broad economic sense, there can be no such thing as general over-production. We are not likely, for many generations to come, to reach a stage in which further production is unnecessary because every human want is adequately met. But it would be ignoring facts to deny that there is such a thing as temporary over-production in particular industries. This phenomenon of temporary over-production is distinctly anomalous. It is certainly anomalous, for example, that warehouses should be over-stocked with boots and the workers idle or working on half-time, while hundreds of thousands of men, women and children may go ill-shod. An industrial system which produces this result can only be described as anarchical, and it

* See p. 33.

is hardly surprising if employers and men alike, confronted with the dread possibility of a slump in trade, should consider the stinting of production their only means of self-preservation.

The causes of trade depressions are examined in another chapter,* but one aspect of the subject comes within the scope of the present discussion. If human wants are insatiable, why is the market glutted with goods which cannot be disposed of save at unremunerative prices? The answer is that the demand of the would-be consumer is not "effective," that is, he has the desire for the commodity, but not the means of purchasing it. The analysis may be carried a stage further. The inability of the would-be consumer to purchase what he requires arises from the unequal distribution of wealth.† Under the existing system a large portion of the wealth produced goes into a few hands. The owners of it, after satisfying all their wants, find themselves in possession of wealth which they are unable, or do not desire, to consume, and they are compelled to save it. Their savings are used in the form of capital to create more wealth, or rather, more wealth-producing goods such as factories, ships, locomotives, &c. But the owners themselves, being comparatively few in number, cannot consume all the goods produced by their factories, and the wage-earners are not able to consume them because their wages do not enable them to do so. In other words, the community may suffer from over-saving, or to put it in another way, there may be an over-production of "producer's goods" (instruments of production, like machinery, which are used to produce more wealth). If the purchasing power of the many were increased, and the saving power of the few diminished until an equilibrium were reached, then the many would be in a position

* Chapter V.

† Mr. J. A. Hobson has laid stress in his writings (e.g., *The Problem of the Unemployed*) upon the unequal distribution of wealth as a cause of under-consumption, but it is necessary to stress also the importance of providing capital for the creation of future wealth. A variation of the same theme is Major C. H. Douglas's contention in his *Economic Democracy* and *Credit-Power and Democracy*, that the amount of money distributed in the form of wages, dividends, etc., is insufficient to enable the consumer to purchase all that is produced. He argues in favour of a system of credit which would enable the purchasing power of the community to keep pace with the actual production of commodities.

to consume the wealth produced as a result of the savings of the few. The dangers of discouraging the faculty of saving need no stressing. The remedy may well prove more dangerous than the disease, but under the present industrial system there is this antagonism of interests between the workers who want to consume more—and therefore demand higher wages—and the capitalists who want to save more and therefore claim higher profits. It is owing to this excess of saving that so much of the wealth and energy of the country is diverted into wrong channels. When, for example, a trust is formed, its first act will often be to close down a number of factories, without necessarily causing any reduction in the total output of the combined firms. The explanation is that many of the factories were not working to their full capacity, and orders were being distributed among two or more firms which were well within the capacity of one. It is clear from the experience of trusts that there is often an excess of "producer's goods," and this excess means a misdirection of the national resources. If the distribution of wealth were improved, it is impossible to doubt that the stability of industry would be enormously increased. There would be a steady and regular demand for essential commodities, a demand which would be more easily ascertained because less liable to violent fluctuations, and the equilibrium between production and consumption would be more readily established. The more even distribution of wealth would also correct the present tendency to create more "producer's goods" than the needs of the community at any given moment require.

What conclusions emerge from the foregoing discussion ? The existing economic system has undoubtedly very grave defects. Production and consumption balance each other only in the long run. At any given moment, there is liable to be a hiatus, that is, there is either an excess or a shortage in production. The recurrence of commercial crises, with their familiar and dismal phenomena of unemployment, relief works, and often starvation, has

inspired the workers with the belief that they must avoid over-zealous effort—"speeding-up"—in order to make the work last longer. Admitting the evil of temporary over-production, we have endeavoured to show that the remedy of curtailing the output is worse than the disease. It prevents the workers earning as much as they might ; it lessens the purchasing power of the wages they actually receive ; and it places the whole industry in an essentially false position, heightening the cost of production and raising prices, and thus really increasing, rather than diminishing, the liability to unemployment. In the long run increased production means better wages and more regular work. Leaving out of consideration the possibility of a radical transformation of our present industrial system, we believe the true remedy may be found in two directions : firstly, an increase in output on the basis of piece-rate remuneration fixed in agreement with trade unions, and—if desired by the unions—fortified by legal sanction ; and secondly, a State guarantee against destitution, resulting from involuntary unemployment. Both these points will be considered in detail in later chapters,* but it may be observed here that a solution on these lines would also facilitate the employment of semi-skilled workers in industry and the introduction of new processes and machines.

Our object in this chapter has been to show the importance of increased production, and the causes retarding the supply of commodities. In the following chapters we shall discuss the methods by which the output of national wealth can best be promoted. Business men and workers alike tend to follow a short-sighted policy. The former, as Lord Leverhulme has pointed out, resist increases in wages and shortening of hours ; the latter resist the attempt to increase output and reduce costs. Neither increased production nor industrial harmony can be attained while mistaken economic notions prevail. To appreciate the problem in its true bearings we must go to the very roots of national well-being.

* Chapters III. and V.

CHAPTER II.

THE EFFICIENCY OF LABOUR.

The "National Dividend" is the resultant of three forces working in co-operation: land, labour, and capital. In proportion as any one of these forces gains in efficiency the wealth of the country is increased, while anything which impairs efficiency is an economic loss. From this standpoint the problem of increased production becomes primarily a study in the factors which promote industrial efficiency, and our first task must be to indicate the nature of these factors. In the present chapter we are concerned with the efficiency of the worker; in another we shall discuss the efficiency of management.

The efficiency of labour depends upon three things: (1) the standard of life; (2) the prevention of industrial fatigue; (3) environment and the general conditions of employment.

THE STANDARD OF LIFE.

The fundamental condition of increased production is a fit and proper standard of life for the workers. In the nineteenth century rates of wages were influenced mainly by the economic operation known as the "higgling of the market." The principle of State regulation of wages was abandoned in 1824, when the Spitalfields Act was repealed, and it was not revived until 1909. In the absence of State control how far did voluntary agencies ensure to every worker a "living wage," sufficient to meet his "normal essential needs"? An enquiry which was held into the Earnings and Hours of Labour* in 1906

* Cd. 4,545 (1909); cd. 4,844 (1909); cd. 5086 (1910); cd. 5,196 (1910); cd. 5,460 (1910); cd. 6,053 (1912-3); cd. 6,556 (1912-3).

affords materials for an answer. The following table shows the earnings of men and women, working full time, in various occupations.

INDUSTRY.	MEN WHO WORKED FULL TIME.		WOMEN WHO WORKED FULL TIME		
	(a) Percentage earning less than 20s. per week.	(b) Percentage earning less than 25s. per week.	(c) Percentage earning less than 10s. per week.	(d) Percentage earning less than 15s. per week.	(e) Percentage earning less than 20s. per week.
Building and Woodworking ...	5.7	24.4	19.0	70.8	94.2
Metal, Engineering and Ship-building ...	7.6	25.5	23.0	73.4	94.9
Textiles ...	18.4	45.6	13.3	52.1	79.0
Paper and Printing ...	6.8	22.0	26.5	78.7	95.2
Clothing ...	7.2	27.2	21.6	66.7	89.9
Pottery, Brick, Glass and Chemicals ...	9.1	37.4	31.0	80.7	96.0
Food and Drink ...	16.4	47.8	37.8	82.0	96.4
Miscellaneous Industries (Tanning, Leather Dressing, etc.)	9.5	42.4	25.4	78.5	94.5
Public Utility Service ...	12.0	37.4	14.0	51.9	79.6

This table shows that in 1906 from one-quarter to one-half of the men engaged in industry were earning less than 25s. per week, and from one-half to four-fifths of the women were earning less than 15s. per week. Between 1906 and 1912 the mean increase in rates of wages (excluding agriculture) was 7.7 per cent. ; but the average increase in the cost of workmen's rent, food and clothing was about 10 per cent.* Increases in rates of wages were, therefore, not in proportion to increases in the cost of living.

Towards the end of the nineteenth century public opinion, largely owing to the efforts of Mr. Charles Booth and other social investigators, was gradually aroused to the fact that—in spite of the increasing prosperity of trade—a large portion of the population lived in a condition bordering on destitution. Mr. Booth estimated that about 30 per cent. of the population in London were living in poverty ; Mr. Rowntree's figure for a provincial town—York—was (approximately) 28 per cent. ; while enquiries conducted by Dr. Bowley and others into the economic conditions of Reading, Northampton, Warrington, and Stanley showed that poverty existed there “on

* Cd. 6955 (*The Cost of Living of the Working Classes, 1912*), p. 11.

a scale really appalling."* The condition of the workers in the sweated industries was summed up by a Select Committee of the House of Lords on the Sweating System in these words : " Earnings barely sufficient to sustain existence ; hours of labour such as to make the lives of the workers periods of almost ceaseless toil, hard and unlovely to the last degree ; sanitary conditions injurious to the health of the persons employed and dangerous to the public."

The evils of unregulated industrialism forced upon the State a recognition of the fact that " economic progress," if achieved at the expense of " social welfare," may be purchased too dearly. It could not, therefore, afford to be indifferent to conditions which went to the very roots of national well-being. The public consciousness gradually became permeated with the conception of a National Minimum—a minimum standard of well-being to which every person was entitled, irrespective of his or her position in the industrial order. This conception could be defended on the ground of increased production, preservation of the race, or humanitarianism, but, whatever the ground for its acceptance, it became a recognised postulate of social morality. The principle of the National Minimum found expression in the Factory Laws designed to secure a minimum of safety and leisure, in the Education Acts designed to secure a minimum of instruction, in the Health Acts, and in other measures of remedial legislation. Once the State, impelled by the social conscience, resumed responsibility for the maintenance of a certain standard of health and comfort, it was brought to recognise that the principle of a National Minimum, already applied to hours of labour, education, sanitation, could not stop short of a minimum of subsistence. Public opinion was ripe for action, and attention was attracted to experiments in wage regulation which were being carried out in Australia and New Zealand. These experiments have formed the model for minimum

* Booth, *Life and Labour in London* ; Rowntree, *Poverty* ; Bowley, *Livelihood and Poverty*.

wage legislation in this country and in the United States, and a brief account of them will, therefore, not be out of place.

A minimum wage law may be of two kinds. It may institute uniform minimum rates below which no worker may be employed—an example is the Utah Minimum Wage Act of 1913, which fixes the minimum rates to be paid to women workers—or it may provide for varying minimum rates in different industries. The latter method is followed in Australia and New Zealand, where two systems are in operation: a Wages Board system in Victoria and Tasmania, and an Industrial Arbitration Court system in New Zealand and Western Australia.* In fixing minimum rates one of two principles can be adopted: they may be assessed on the basis of what the industry is presumed able to afford, or the "living wage" may be taken as the basis. Overseas the second principle is the most generally followed. "One cannot conceive of industrial peace," stated the President of the Commonwealth Arbitration Court, "unless the employee has secured to him wages sufficient for the essentials of human existence. This, the basic wage, must secure to the employee enough wherewith to renew his strength and to maintain his home from day to day."†

In England the principle of a minimum wage was embodied, after an interval of nearly a century, in the Trade Boards Act of 1909, when it was applied to four sweated industries: tailoring, chain-making, box-making, and lace-making. It has since been extended to other industries, and may shortly be expected to apply to every industry in which the necessity for it is at all apparent. We may conveniently, at this point, inquire into the probable effects of a minimum wage on industry, and the extent to which it is likely to promote increased production.

* In New South Wales, Queensland and South Australia both systems exist. See the *Official Year Book of Australia*, No. 11.

† Mr. Justice Higgins, *A New Province for Law and Order*, p. 6.

Observe, first of all, the economic consequences of low wages. We shall say nothing here about their social effects ; we are concerned, rather, to show that even on purely economic grounds low wages are to be condemned. During the war the nation awoke to the fact that a large portion of the population belonged to the lowest military category. This revelation was surprising only to those who were ignorant of the toll which a century of industrial exploitation had taken in the shape of long hours, exhausting toil, and imperfect nourishment. What is still hardly appreciated is that men who are not good fighting material because their physical constitution has been undermined by insufficient food, clothing and house-room, are no more capable of a high standard of production than they are of enduring the hardships of a military life. The Census of Production (1907), which showed a very low output per individual worker, was the best commentary upon the facts disclosed in the Enquiry into the Earnings of Labour. There is a general consensus of opinion among economists and experienced business men that high wages promote the efficiency of labour, and therefore increase the National Dividend, the source from which all wages, profits, and rents flow. "The wages of labour," declared Adam Smith in a famous passage, "are the encouragement of industry, which, like every other human quality, improves in proportion to the encouragement it receives."* As Professor Marshall has pointed out : "It is only in our own generation that a careful study has begun to be made of the effects that high wages have in increasing the efficiency, not only of those who receive them, but also of their children and grandchildren. Highly-paid labour is generally efficient and therefore not dear labour ; *a fact which is more full of hope for the future of the human race than any other that is known to us.*"† The economy

* *The Wealth of Nations* (ed. E. Cannan), i. 83.

† *The Principles of Economics*, p. 510. The term "wages" here means "real wages" (as interpreted by purchasing power), and not "nominal wages" (as interpreted in terms of money).

of high wages has been repeatedly demonstrated by experience. Lord Brassey, whose famous book, *Work and Wages*, was based upon first-hand knowledge of the great industrial enterprises undertaken by his father, declared that "the daily wage is not the true measure of cost. The superior diligence, the skill and energy of the workmen, may and generally do largely compensate the employer who pays a higher rate of wages. Or again, when the superior qualities of the operatives do not fully make up for the difference in wages, the high price of labour will generally lead to the use of labour-saving machinery."* He gives innumerable proofs of this contention. "At the commencement of the construction of the North Devon Railway the wages of the labourers were 2s. a day. During the progress of the work their wages were raised to 2s. 6d. and 3s. a day. Nevertheless, it was found that the work was executed more cheaply when the men were earning the higher rate." Evidence of the working of the Trade Boards Act points in the same direction. "The higher weekly earnings, induced by the Trade Board, create at once a desire and a capacity to earn them."† It seems to be a not uncommon experience that an increase in output, or an improvement in quality,‡ has followed the establishment of minimum rates. "Employers have told us," wrote an investigator into the box-making industries, "that the prospect of a higher wage does lead the girls to put forth greater energy. 'The output per machine has increased,' said one employer, 'because the girls work better; there is more inducement now, owing to the increased wage.' 'The cost has not increased as much as we expected,' said another, 'those who are paid a larger wage earn it, and the output is greater.'"§ In the face of this evidence we may fairly conclude that the institution of minimum rates will promote the efficiency

* Brassey, *Work and Wages*, pp. 75-6.

† Tawney, *Minimum Rates in the Tailoring Industry*, p. 74.

‡ Tawney, *Minimum Rates in the Chain-Making Industry*, p. 111.

§ Bulkley, *Minimum Rates in the Box-Making Industry*, p. 51.

of labour and so raise the level of its output. It is worth while observing in this connection that England's most serious competitors, for example, America, are the countries where wages are relatively high.

Most of the arguments against a legal minimum wage will not stand very close scrutiny. It is impossible to discuss them here in detail, but they may be briefly passed in review. It is often questioned whether industry can support a living wage: but this is not a matter of theorising; it can only be determined by taking into account the efficiency of the worker actual and potential, and the possibility of effecting improvements in industrial organisation. If it were conclusively proved that a particular industry could not furnish a decent livelihood to the workers engaged in it, then it should be regarded as a parasite industry, the continued existence of which ought not to be tolerated. The argument that the minimum tends to become the maximum is not borne out by the experience of Australia and New Zealand, nor is it the case in respect of the standard rates fixed by British trade unions. As regards foreign trade we have already alluded to the fact that our most serious competitors are high-wage countries, and the folly of endeavouring to meet this competition by low wages is transparent. The opinion that high wages necessarily cause high prices is fallacious; cheapness of production depends on efficiency, and labour cost is to be measured by output, not by money wages.

INDUSTRIAL FATIGUE.

In all discussions on increased production the question of industrial fatigue must be carefully considered. It is an erroneous notion that long hours mean high output. The first instinct of an employer, ignorant of physiological science, is to increase the length of the working day, but here, as in their insistence on a higher standard of life, the demand of the workers for shorter hours has proved to be founded on a truer appreciation of physiological realities.

The war has taught the lesson that prolonged hours of labour do not increase output, but actually diminish it. Early in the war, the Ministry of Munitions appointed a Committee to inquire, among other subjects, into "Industrial Fatigue and its Causes." In its Report* the Committee declared that "misguided efforts to stimulate workers to feverish activity in the supposed interests of the country are likely to be as damaging to the desired result as the cheers of partisans would be if they encouraged a long-distance runner to a futile sprint early in his race." It urged that "the country cannot afford the extravagancies of paying for work done during incapacity from fatigue just because so many hours are spent upon it or the further extravagance of urging armies of workmen towards relative incapacity by neglect of physiological law." The experience of the great employers of labour bears out the results of scientific investigation. Lord Leverhulme,† after referring to the "appalling waste caused by over-fatigue of workers, resulting in inefficiency, bad health, lost time, premature decay and death," quotes a statement made by Sir Robert Hadfield: "At our plants we have reduced working hours with that largely beneficial result which seems to be inevitable. It has become clear that this procedure is even better business than it is humanity. Shorter hours make good men better, and bring the medium workman up to something higher than the old-time average. . . . The fact that workmen are not themselves machines is not yet appreciated in its full value." It is significant, too, that "the high-wage countries and industries are generally also the short-hour countries and industries."‡

Human effort, like everything else, is subject to the law of diminishing returns: there is a point beyond which it ceases to give a proportionate return. It is true that longer hours were worked under the domestic

* Cd. 8213 (1916).

† *The Six-Hour Day*, pp. 16, 27.

‡ Pigou, *Wealth and Welfare*, p. 30.

system than under the factory system, but the intensity of modern industrial life makes more exacting demands upon the worker and involves a greater nervous strain. Shorter hours usually have the most beneficial results in the shape of increased output, improved quality, and more careful handling of machinery. Moreover, leisure affects the whole character and outlook of the worker, enriching his life and raising him to the higher level which modern industry demands.

In certain cases it is possible that a further reduction of hours would decrease production, but the social argument in favour of a shorter working day still remains, and even the economic loss, if any, might be counteracted by more efficient methods of management, for example, the use of improved machinery, the avoidance of waste, and so forth. The adoption of the shift system, where practicable, would probably remove all danger of economic loss. It has been proposed to have two shifts a day of six hours each ; this would enable the worker to have his sleep at night. In most workshops and factories, observes Lord Leverhulme, the cost of production in the form of overhead charges—interest on capital, salaries, rates and taxes, depreciation, etc.—is double or more the cost of wages. “ In all these the six-hour day can be applied with enormous gain provided the supply of raw material and labour were available and the demand for products existed.”* The gain from economy of production should be divided, in the opinion of the author cited, between the workers in the shape of shorter hours and increased earnings, and the consumers in the shape of lower prices ; the capitalist himself would receive his share “ on his increased production and quicker turnover of capital, with resulting increase in dividend-earning capacity.” Whether the shift system is adopted or not,† the practice of working

* Lord Leverhulme, *The Six-Hour Day*, pp. 19-20.

† Organized Labour appears to be opposed to the two-shift system, but the experiment might well be made on a small scale in order to see how far its disadvantages can be remedied.

overtime should be regarded as something exceptional. It is socially injurious to deprive the worker of his leisure ; and it is uneconomical to pay higher rates to men when they are fatigued than when they are fresh. The practice is also thought to encourage "dawdling during the day," in order that the men may earn the higher rates.

The Report on *Industrial Fatigue and its Causes* contains a valuable account of the symptoms of fatigue. After stating that the true sign of fatigue is diminished capacity, it lays down the conditions under which the test must be applied. " The output must be measured under the ordinary conditions of the work, and . . . tested by methods which do not allow the workers to be conscious at particular times of the test being made. In this way the errors due to special effort from interest or emulation will be eliminated. The results of work expressed in output must be corrected by allowance for all variable factors save that of the workers' changing capacity ; changes in supply of steam or electric power and of raw material, for instance, must be determined for the correction and interpretation of the actual output returns. Isolated tests of output taken sporadically will be meaningless. The records must also extend over longer periods to show the onset of fatigue over the whole day and over the whole work." Measurement of output must be recorded for each individual. " This, in many factory processes, is easily possible, and when it has been done, the results have shown surprising variation of individual output which are independent of personal willingness and industry, and have generally been quite unsuspected by the workers and their supervisors. Information so gained is valuable in two respects. Good individual output is often the result of escape from fatigue by conscious or unconscious adoption of particular habits of manipulation or of rhythm. Its discovery allows the propagation of good method among the other workers. In the second place, these tests of individual capacity (or its loss by fatigue) give an opportunity for a rearrangement of workers and their assignment to par-

ticular processes of work. Astonishing results, bringing advantage both to employers and employed, have been gained in other countries by the careful selection of individuals for particular tasks based not upon the impressions of foremen, but upon the results of experiment." The Report concludes with the words: "Our national experience in modern industry is longer than that of any other people. It has shown clearly enough that false ideas of economic gain, blind to physiological law, must lead, *as they led through the nineteenth century*, to vast national loss and suffering. It is certain that unless our industrial life is to be guided in the future by the application of physiological science to the details of its management, it cannot hope to maintain its position hereafter among some of its foreign rivals, who already in that respect have gained a present advantage."

ENVIRONMENT AND THE GENERAL CONDITIONS OF EMPLOYMENT.

The modern machine, it has been said, "is one of the greatest religious and moral teachers the world has produced in modern times," because it demands of the worker intelligence, high character and moral conduct.* It is the duty of the State to provide the conditions which will make possible a healthy and vigorous population competent to meet the requirements of modern industrial life. Ample and suitable accommodation is the most vital of these conditions, for physical and mental vigour cannot thrive in slum districts. Disease, low vitality, and a high death-rate, we are told, are the fruits of over-crowding. The following table, relating to school-children in Glasgow, speaks for itself.†

HOUSING.	BOYS.	GIrls.
1 room	46.6 inches (height) 52.6 lb. (weight)	46.3 inches (height) 51.5 lb. (weight)
4 rooms	51.3 inches (height) 64.3 lb. (weight)	51.6 inches (height)‡ 65.5 lb. (weight)

* This is particularly evident where semi-skilled workers are recruited from the labouring population; while the increasing complexity of modern machinery makes great demands upon the intelligence of the mechanics engaged in making and repairing it.

† Chapman, *Work and Wages*, ii., 24.

‡ Although the discrepancy may be partly due to other causes (e.g., malnutrition), over-crowding is clearly an important factor in the situation.

Several model villages, altaire, Bournville, Port Sunlight, have been erected by employers, and they have served to show what can be done in this direction, but it is not desirable that the employer should be his workmen's landlord, and communal enterprise is the only real way of dealing satisfactorily with the housing problem. Physical efficiency can also be promoted by improved factory conditions, the stricter enforcement of laws against adulteration of food, the provision of a pure milk supply, the teaching of domestic economy and elementary hygiene, and the prevention or abatement of smoke in industrial centres.

The economic wastage resulting from causes which are largely under human control defies the imagination. The ravages of illness and disease could be greatly circumscribed if an infinitesimal portion of the money expended on the war were devoted to medical research, and if decent conditions of life were provided for everyone. Take, for example, tuberculosis. According to the Departmental Committee on Tuberculosis (1913), "a healthy, sober, well-fed, well-clothed and well-housed community is far less liable to infection from tuberculosis than one in which disease and drinking habits are prevalent, whose members are inadequately fed and clothed, and in which houses are crowded and insanitary. It may broadly be said that an advance in material prosperity of the community as a whole will be reflected in a decreased incidence of tuberculosis."* The maintenance of the health of the people—it cannot be too often repeated—is a primary requisite of increased production.

We shall say a word in conclusion about the training of the worker. The fundamental objects of education are to form character, develop latent talent, lay the basis for vocational instruction, and create an intelligent interest in public affairs. The worst form of education is the purely technical, for not only must the child be

* Quoted in Chapman, *op. cit.* ii., 108.

initiated in the duties of citizenship, but it is necessary to foster imagination and intellectual curiosity, without which industrial progress is impossible. The imaginative mind is fertile in new ideas, conceives new methods, invents new processes and machines ; and it makes the individual more capable of taking the initiative and more adaptable to changing conditions. As Sir A. D. Hall has well said,* by a good education is meant "not so much additional knowledge of a technical sort, but the more flexible habit of mind that comes with reading, the susceptibility to ideas that is acquired from acquaintance with a different atmosphere than the one in which (a man) ordinarily lives." Where the worker is mentally alert, the possibilities of industrial friction are likely to be greater—especially so long as serious social injustices continue to exist—but even from the narrower standpoint of the production of wealth, the economic gain will outweigh any economic loss. It is particularly important in any system of training that the worker should grasp the general principles of the industry in which he is engaged in order that he may conceive himself as something more than a cog-wheel in the industrial machine ; and a knowledge of its history will do much to quicken his interest, deepen his pride, and broaden his horizon. A proper system of training would also serve to reveal a worker's real capacity. It has been recently pointed out that there is usually no one in a large establishment whose province it is to study the abilities of the employees and put them to the task for which they are best adapted. A man is dismissed for incompetency in one direction, although he might be found quite competent in another direction, if an organised effort were made to discover latent talent.

* *Pilgrimage of British Farming*, p. 440.

CHAPTER III.

THE REMUNERATION OF LABOUR.

Under the present industrial system the motive to work is supplied by the payment of wages. The employer is not in business "for his health," but is out to make profits, and the employee does not work for another man from love of service, but in order to earn a livelihood. The question therefore arises: what method of industrial remuneration is most likely to promote efficiency and stimulate increased production? The methods of remuneration are mainly four: time-rates, piece-rates, premium or bonus schemes, and profit-sharing. We must say something about each of these.

Time wages do not directly encourage efficiency—except in the case of the worker who takes a real pride in his work—and employers on this account usually prefer the system of piece-work in which remuneration is based on output. This mode of payment of wages has much to commend it: it stimulates a workman to do his best by giving him a direct interest in his output, and experience shows that men who are engaged on time wages fail, as a rule, to produce the same amount. Many, therefore, cannot understand why the workman (to quote William Denny, a well-known Clyde ship-builder of the last generation) objects to piece-wage remuneration which gives him an "increase of from 25 to 50 per cent. in his wages—and this increase my experience confirms, as a rule—and puts at once within his power a more comfortable and easy style of living, combined with an opportunity of saving, which, if he is a sober and careful man, will enable him to enjoy a pleasant old age, and even to lay by sufficient money to enable him to refuse on his own account any rate of payment which he deems insufficient." The objections against piece-wage

remuneration are numerous, and though they are not necessarily fatal, they explain the unpopularity of the system in its present form. In the first place, it is often criticised on the ground that it fosters irregular habits, causing workmen to take days off and then to work feverishly to make up for lost time. Again, it may induce a workman to over-exert himself, though probably he soon learns the limits to which he may safely go—and in practice, piece-work does not lead to sustained over-exertion among miners and cotton operatives. It may also cause work to be "scamped," though, as the work is tested, the fault lies with the employer if it is passed. It certainly penalises the conscientious worker who takes a pride in turning out a good article, and it may happen that workmen who are not equal to the strain of "speeding-up"—and this is the object of piece-wage remuneration—will not easily find employment. But the fundamental objection to piece-work in the minds of the workers is that it leads to rate-cutting. A workman is induced to make every possible exertion, encouraged by the stimulus of a reward proportioned to his effort. In this way he reveals to his employer his exact capacity, and armed with this knowledge, the employer, in innumerable cases, proceeds to cut the rates, as a result of which, the workman finds himself earning his old, or a slightly increased income, at the cost of much greater exertion. The "standard rate"—a wage paid on the implied basis of a certain output in a certain period of time—is thus subtly undermined. One of the Reports of the Amalgamated Society of Engineers stated that "the system has often been made the instrument of large reductions of wages, which have ended in the deterioration of the conditions of the workmen. . . If an expert workman, by his skill and industry, earns more than his neighbour, and much more than his daily wages come to, a reduction is at once made and made again until, eventually, the most expert is only able, by intense application and industry, to earn a bare living, whilst the less skilful is reduced below living prices." It is not the principle

of trade unionism, as is sometimes supposed, to establish a dead level of uniformity, and make all its members earn alike. But the public opinion of the workshop undoubtedly discourages "chasing," that is, working exceptionally fast, from the fear—which experience has proved well-founded—that piece-rates will be fixed on the output of the exceptionally able workman, and not on the output of the average or normal workman. William Denny, after several years' experience of piece-work, was constrained to admit that, "excepting in cases where rates can be fixed and made a matter of agreement between the whole body of the men in any works and their employers, piece-work prices . . . are liable, under the pressure of heavy competition, to be depressed below what I would consider a proper level. . . Unless the men feel that their exertions produce really better wages, there is an end to all stimulus to activity. . . The method of piece-work is one which cannot be approved or condemned absolutely, but is dependent upon the spirit and the way in which it is carried out for the verdict which should be passed upon it. It is imperative in such kinds of piece-work as by their nature cannot be reduced to regular rates, that either the employer should take the responsibility of safeguarding his workmen's interests, or that the workmen themselves should . . . obtain an effective control over them."* It would be unreasonable, of course, to demand that piece-rates, once established, should in no circumstances be revised. A new process might be discovered in which the work could be done in far less time, and unless the workmen agreed to a revision of rates it would not be worth the employer's while to make the change, nor would the community reap the benefit which results from any cheapening of the cost of production. The weaver employed on a power-loom could not expect the same price for weaving a piece of cloth which was paid to the hand-loom weaver, though, of course, his weekly earnings would be much greater owing to the increased output. But any proposal to revise

* Quoted in Webb, *Industrial Democracy*, pp. 293 seq.

the basis of piece-work remuneration on the ground of a change in the processes of industry, must be accompanied by guarantees : (1) that the net weekly earnings of the workman will in no case suffer any diminution ; (2) that the worker will be compensated for any increased effort or strain involved in working the new process ; and (3) that he will receive a share in the increased prosperity of the industry since, if he did not initiate the change, his co-operation is essential to its successful working.

The majority of trade unions, for example the coal-miners and cotton spinners, accept piece-work remuneration, but some strenuously resist it, partly for the reason just noticed, and partly because—without proper precautions—it militates against collective bargaining. Thus the Amalgamated Society of Engineers contend that “piece-work is not a bargain, but a price dictated by the employer and lowered at will.” In the cotton industry, where the work proceeds on uniform lines, it is possible to frame standard piece-lists acceptable to the employers and the unions, but in the engineering trades there is great variety of output, and a special price has to be paid for each job. This involves a return to individual bargaining, which cuts at the very root of trade unionism. It ought to be possible to discover some way out of the impasse. Employers should reflect that it is in their interest to remove every obstacle which now hinders the general adoption of piece-work remuneration. They have to meet the standing charges of rent, interest, and salaries of office staff, and should welcome any method of increasing production. Moreover, machinery is often out of date long before it is outworn, and the manufacturer must therefore desire to work it to the full before it is scrapped. On their part the workers should remember that if expert workmen, when yoked with their less skilful fellows, do not pull their full strength, the cost of production is raised to the detriment of the community of which they are a part. Again, the ability of the employer to pay the weaker workers the standard rate must depend in many cases upon the extent to which he

profits by the efficiency of his stronger workers, averaging out the cost, and the refusal of the latter to exert their real powers must make the work of the former still more unremunerative to their employer. Moreover, piece-rates enable the trade unions to bring pressure to bear upon the inefficient employer to introduce the best machinery, since deficiencies in plant and material have to be compensated for by higher piece-rates—as in the cotton industry—in order that the worker may earn as good wages as in shops which are properly run. Nevertheless, the system of piece-work remuneration must be accompanied, as we have said, by absolute guarantees that it will not be used as a means of rate-cutting or to undermine the principle of collective bargaining. And no guarantee can be regarded as satisfactory in which the representatives of the men are excluded from their proper share in the determination and maintenance of piece-wage lists.

It is worth while to notice a modification of the ordinary system of piece-work, namely, "collective piece-work." Instead of individual bargaining, a group of workers contract to perform a job at a given price. The advantage lies in the fact that the exceptionally able workman is no longer deterred by the "public opinion" of his fellows from exerting his full strength. Each member of the group becomes directly interested in the speed and skill of every other member, and the method of combined effort evokes a healthy spirit of comradeship in place of the individual self-seeking encouraged under the ordinary system of piece-work.*

Among the devices for encouraging increased production profit-sharing and gain-sharing occupy a prominent place. They have attained at best only a moderate success, and in

* In some cases the extra remuneration earned by each man in the shop is pooled. One interesting modification of piece-work is to increase the piece-rates after a certain amount has been earned. Thus, after £3 has been earned on piece-work rates, every additional shilling receives a bonus of 3d. The employer is able to increase the ordinary rates once the normal output has been produced.

their present form they are not likely to do much in the way of stimulating production. Yet they contain features which are wholly admirable, and if they were purged of certain elements they might well command wider sympathy and prove the stepping-stone to a new order of things.

An early example of profit-sharing was the scheme tried at the Whitwood Collieries in Yorkshire in 1865. The promoters announced that "in order to associate capital and labour still more intimately, the founders of the company will recommend to the shareholders that when the divisible profits accruing from the business shall (after the usual reservation for redemption of capital and other legitimate allowances) exceed ten per cent. on the capital embarked, all those employed by the company, whether as managers or agents at fixed salaries or as workpeople, shall receive half of such excess profit as a bonus, to be distributed amongst them in proportion to, and as a percentage upon, their respective earnings during the year in which such profit shall have accrued." After ten years the scheme was abandoned, and though other experiments have been more successful the progress of the movement has not been very marked. The number of profit-sharing schemes in existence in 1919 was 182, and the number of persons affected was about a quarter of a million.*

One feature of the movement is its infinite variety. Every scheme of profit-sharing has its own peculiarities. This is valuable because it enables different experiments to be tried and makes it possible some day to frame a scheme compounded of all the best elements in the present schemes. We cannot enter here into the details of profit-sharing, but all schemes agree in fixing the interest on capital, and in sharing out excess profits between capital and labour. The surplus due to the workers is usually distributed on the basis of the earnings of each worker, and in the majority of schemes it takes the form of a cash bonus. This is profit-sharing pure

* Cd. 544 (1920).

and simple, but in other cases the worker receives his bonus in the form of shares upon which he is paid the dividend of an ordinary shareholder.

We must now consider the objections raised against profit-sharing. The consumer views with some apprehension a system in which capital and labour have a mutual interest in keeping prices up in order that profits may be high. The danger is not perhaps a serious one in our present competitive system, though it is hardly likely to be so successfully overcome as in the scheme of the South Metropolitan Gas Company where the interests of shareholders, employees and consumers are ingeniously reconciled, dividends and the workers' bonus rising as the price of gas falls. The employer, again, is disposed to question the right of labour to share profits when it is unwilling to submit to a reduction of wages in the event of losses. Godin, the author of one of the most memorable schemes of profit-sharing, has supplied the convincing answer: "This argument is specious. It is not true in effect that labour is not exposed to chances of loss: its losses are felt in a form different from those of capital, but they are none the less real for that. Is it not a loss for labour when the course of industry necessitates a reduction of wage? Is it not a loss for labour when unemployment arrives and wages cease with the closing of the workshop?"* Moreover the employer has everything to gain from a system which discourages the waste of material, idling, and scamping of work. The most serious criticisms come from the side of labour. It is pointed out that the fixed dividend on capital—however reasonable in appearance—may be excessive in the case of watered capital, and the suspicion that the moderation of the capitalist is specious must be fairly met if labour's co-operation is honestly sought. Again profits are very elusive and the worker may easily find them diverted into channels other than his own pockets. At the Whitwood Collieries in 1873 "a sum of £30,000 was taken

* Quoted in Fay, *Co-partnership in Industry*, p. 134.

out of the previous year's profits and invested in a mine ; the shareholders got new shares in respect of it, but the employees lost the £15,000 of bonus which would otherwise have come to them as their share in the divisible profit." The advocates of profit-sharing recognise that "the general fixing of wages still remains the business of the trade union" * but there is none the less a widespread feeling that the movement is inimical to the principle of collective bargaining. It is thought to strike a blow at the solidarity of the working classes, driving a wedge into the labour movement, and marshalling many of the workers' battalions on the side of capitalism. It would be difficult to enforce a general strike in any industry if a section of the workers were afraid of losing their bonus, or if their participation in schemes of co-partnership made them indifferent to the interests of their class. Some colour is given to the suspicion that profit-sharing creates an anti-union bias from the fact that in its inception it was intended by some of its authors to have this effect. Again, the delay in paying the bonus weakens its power of stimulus, and it must be confessed also that, as an addition to wages, profit-sharing does not seem very attractive. In 1915 the total distributed by 127 firms to 71,268 workers was £370,246, an average of about £5 4s. to each participant.† The bonus does not seem an adequate return for the increased exertions and economies demanded of the worker, nor is there any guarantee that the bonus will be forthcoming. Whatever exertions they make, the firm may work at a loss owing to causes which lie beyond the workers' province. An attempt has been made to overcome this particular difficulty by the device of gain-sharing, in which the worker is guaranteed a definite reward for his increased exertions, but the workers are distrustful of a system which, as is the case of piece-wage remuneration, lends itself easily to exploitation in the shape of rate-cutting.

* Mundy, *Co-partnership Organization of Labour*, p. 8.

† *Thirtieth Report of the Labour Co-Partnership Association*, p. 10.

Profit-sharing, then, is hardly likely to provide a stimulus to increased production, unless it is made part of a larger scheme of co-partnership in industry. The employer who embarks on profit-sharing must first of all remove every ground for suspicion that his object is merely to stop strikes and to weaken the trade union movement. He must pay the standard rates required by the union, in order to preclude any suggestion that the bonus is a sop to the workers to accept under-payment. He must put no obstacle in the way of their joining a union, and he must frankly concede that in times of crisis loyalty to their less fortunate brothers must take precedence over the employer's interests. And lastly his aim must be to make the scheme the basis on which to build up a very real partnership in industry between himself and his employees. There are schemes of co-partnership, notably the French schemes of Godin and Leclaire, and the English scheme of William Thomson & Sons, Ltd., which show what can be done in the direction of a transformation of capitalism. If the autocracy of the employer were gradually transformed into a constitutional monarchy in which responsibility increasingly devolved upon the workers, the result would be to diminish the present friction between capital and labour and to supply the greatest possible incentive to the workers to increase production.

CHAPTER IV.

THE EFFICIENCY OF MANAGEMENT.

No one to-day is likely to contend that all employers know their own interest and can be trusted to follow it. It is generally recognised that there are degrees of efficiency among employers as among workers. Employers do not invariably adopt the most efficient methods of management, but are often content to follow the lines of least resistance. In a report submitted to the Building Trades Parliament in August, 1919, the complaint is made that employers are often unimaginative and hampered by insecurity or lack of capital.* The economic outlook of many business men appears to be comprised in the maxim, low wages and long hours, although experience has abundantly demonstrated that economies in production can be effected in other ways than at the expense of the worker. A business is frequently handed down from father to son, and may pass to an incompetent successor. "From clogs to clogs in three generations" is a Lancashire proverb, but it is not in the national interest that economic power over the lives of the industrial population should be concentrated in inefficient hands. An inefficient employer is more harmful to the community than an inefficient worker, for he endangers the livelihood of all the workers whose interests are confided to his care, and whose very existence depends upon his discretion and judgment. In short, business organisation should be regarded as a science, the knowledge of which demands careful training, ability and insight.

One of the beneficial results of trade unionism has been to increase the efficiency of management. It has compelled employers in industries where trade unions are powerful to improve the organisation of their business.

* Quoted in Cole, *Chaos and Order*, p. 173.

In some industries the unscrupulous employer is still able to exploit his workpeople, and it is one of the main arguments in favour of a compulsory minimum wage that it would force employers of this type to utilise their ingenuity in more wholesome ways. If cheap labour were done away with, "a thousand devices latent in inventive brains would quickly make good any momentary loss." The general result of minimum wage legislation in Australia has been to improve industrial organisation. "The pressure of the compulsory high wages, coupled with the pressure to sell as low as possible, has compelled a reorganisation and adjustment of industry to meet the added charge. This reorganisation and adjustment has been all to the good. Scientific methods have been applied all round. We have better machinery, better buildings, better accountancy, better selling, more scientific credit. . . . On the other hand, a great deal of waste, unearned profits, and inefficiency has been eliminated."* Investigations into the working of the Trade Boards Act in England show that it has had similar effects on British industries. Employers have been brought to recognise that the only way to meet the increased cost of labour is the better organisation of industry. Mr. Tawney states that in the tailoring industry the Act has led employers to organise the work so that it may pass through the factory in the shortest possible time, it has induced them to train workers more carefully, and to redivide processes and group them differently, and it has stimulated the introduction of new kinds of power and of better machinery.

There are many ways in which industrial efficiency might be promoted. Every possible labour-saving device should be adopted—the question of safeguarding the interests of workmen displaced by a new process is discussed in another chapter†—in order that an increase in production may proceed simultaneously with a

* F. W. Eggleston, "The Australian Democracy," in *The Economic Journal*, xxv, pp. 35-6.

† Chapter V.

reduction in cost. The specialisation of different firms in the different branches of industry, such as we find in the Lancashire cotton industry, the Yorkshire worsted industry, and, to some extent, in the steel industry, narrows the range within which management operates, and so prevents a dispersion of energy over too wide a field. It is desirable also to encourage co-operation among manufacturers for purposes of purchasing raw material, marketing products, and developing oversea trade. At present, British manufacturers, in some cases through want of imagination, in other cases from excess of caution and reserve, prefer too much to plough a lonely furrow. It is generally agreed, further, that British banks are unduly conservative in their methods, and fail to support new enterprises as readily as did German bankers. They tend to confine their assistance to men whose financial position is already assured, but it is manifestly in the public interest that banks should have their staff of industrial experts to advise upon inventions and new enterprises, and should give adequate encouragement where the report is favourable.

Nothing will increase production more than to harness science in the service of industry, and a closer relationship needs to be established between scientific men and the leaders of industry; in the past English scientific discoveries have often benefited other countries more than our own. In this connection it is worth while to quote the *Report of the Coal Conservation Sub-Committee on Electric Power Supply in Great Britain**:

“In the industrial reorganisation which must take place on the termination of the war the further development of power is of great importance. The present use of motive power per employee is only about half that in the United States of America. . . . It is only by largely increasing the amount of power used in industry (by two or more times) that the average output per head (and as a consequence the wages of the individual) can

* Cd. 9084 (1918).

be increased. The pre-war earning power, or wages, of each individual was far too low. . . . Power may be most efficiently applied to industry by the medium of electricity. . . . Technically and economically the electrical energy can best be provided for by a comprehensive system. . . . Power production in large super-plants with generating machines of 50,000 horse-power or more, will not only be far more economical than in a large number of smaller plants, but will ultimately involve great economies of capital by securing a better load and a more effective use of the plant. Such super-plants, if suitably situated on large sites, would make it possible—so far as it is economical to do so—to extract the by-products in the shape of oils, motor spirits, &c., from the coal before using it as fuel, thus avoiding to a large extent the necessity of importing them.

“ If power supply in the United Kingdom were dealt with on comprehensive lines, and advantage taken of the most modern engineering development, the saving in coal throughout the country would, in the near future, amount to 55,000,000 tons per annum on the present output of manufactured products.”

One method of increasing production is the new art of management known as “Scientific Management.” It has been applied in many American establishments, and the results attained under it have been in many ways remarkable. In this country there is a deep-seated, and in a measure justifiable, distrust of the system, but British trade unions would be well advised not to condemn it off-hand, but to avail themselves of its good features while demanding security against its abuse. The chief author of the system was F. W. Taylor, who has set forth its main principles in his books, *The Principles of Scientific Management* and *Shop Management*. The leading ideas are two: (1) specialisation not only in manual labour as at present, but in the mental labour of business; and (2) time studies of manual operations.

In the first place the business of thinking is reduced to

a science. The planning of work in all its minutest details is divorced from execution. A special department is created, which "concentrates the planning and much other brain work in a few men especially fitted for their task and trained in their especial lines." "All possible brain work should be removed from the shop and centred in the planning or laying-out department, leaving for the foremen and 'gang bosses' work strictly executive in its nature. . . . Each man must learn how to give up his own particular way of doing things, adapt his methods to the many new standards, and grow accustomed to receiving and obeying directions covering details, large and small, which in the past have been left to his individual judgment."* "Instruction cards" are drawn up by the planning department and issued to every operative instructing him in every possible detail of his work, for example, the drawing to which he must refer, the special tools to be used, "where to start each cut, the exact depth of each cut, and how many cuts to take," the standard time of each operation, and so forth. To-day, most workshops are organised on what Taylor terms the military plan: orders are transmitted from the manager through superintendents, foremen, and "gang bosses." The duties of the foremen and gang bosses are most varied, and they lack the expert knowledge to perform every one efficiently; they lay out the work for the whole shop, they ensure that each job goes, in its proper order, to the right machine, and that the man at the machine knows what he must do and how to do it, they watch that proper speed is maintained, they "discipline the men, readjust the wages, and supervise the time-keeping."† Taylor substituted for this "military" type of organisation what is called the "functional" type. This applies specialisation to the work of shop management, and distributes the functions of foremanship among a number of technical experts. Thus the "gang boss" sees that work is always ready for each man and

* Taylor, *Shop Management*, pp. 66, 98.

† *Ibid*, 93 seq.

shows him how to set the work on the machine ; the "speed boss" takes care that the right tools are employed and shows how they are to be used ; the inspector supervises the quality of the work, and the "repair bosses" ensure that the machinery is kept clean and treated properly. In addition, the functional bosses in the planning room determine the route which each piece of work is to travel through the shop from machine to machine. Just as school children are often taught different subjects by different teachers, so the operative receives instructions in the different sides of his work from a number of experts, instead of taking orders from a single superior.* The result is to avoid confusion and delay, and to stimulate efficiency.

The second feature of Scientific Management is time studies of manual operations. Babbage pointed out a long time ago that "if a labourer inconsiderately lifts his shovel but an inch or two more than is necessary to throw its load into his barrow, although the exertion of force is trivial in each instance, its repeated occurrence during the whole day will produce at its conclusion a very sensible difference either in fatigue or in the amount of the work done."† Nevertheless, Taylor had "never met a single shovel-contractor to whom it had ever even occurred that there was such a thing as the science of shovelling."‡ Time study consists in analysing each manual operation, timing every element involved in it separately, and eliminating all superfluous movements. The method is thus described : "An intelligent and willing artisan is selected, and a specially qualified officer set to superintend him. The job has been considered beforehand, and analysed into its various elements. All necessary provision of appropriate material, tools, &c., are ready to hand ; so that he is not required to make any movements save those which belong necessarily to the job, and is never held up for want of any requisite. He is induced

* Emerson in his system retained "line" foremanship, but the foremen are in close touch with the experts.

† C. Babbage, *Views of the Industry of England* (1851), p. 3,

‡ *The Principles of Scientific Management*, p. 38.

to work hard, but not so hard as to over-tire himself : for his output is wanted to be representative of that which can be maintained steadily by workmen generally ; provided, of course, they are supplied with the same standard appliances and subsidiary care, as have been prepared for him. A full record is made at each observation of all details ; such as the sequence of operations, the tools and their adjustments, and the speeds, feeds, cuts, &c., employed.”* The trained observer, in making the record, suggests changes in the traditional methods of labour with a view to the utmost possible economy of effort. It is claimed that the time study and instruction methods of Scientific Management have increased output from 10 to 300 per cent.—in the majority of cases between 60 and 100 per cent.—and as a result “ 350 bricks per man per hour,” where some unions in the old countries “ have restricted their men to 275 bricks per day.”† A similar effect is said to be achieved in other trades.

Once the amount of time required to perform a job has been accurately ascertained, the piece-rate is fixed for it on a much higher level than if the work were done under ordinary conditions ; and the performance of a job in less than the scheduled time carries with it a proportionate increase in remuneration. The essential feature of this system of differential piece-rates is that it makes the reward of labour dependent upon rapidity of execution : the ordinary forms of piece-rates do not distinguish between workers who “ occupy ” their employer’s plant or work-space for a longer or shorter period, although the cost of production is greater in the former than in the latter case. Gantt pointed out that, under the usual methods of management, cost of production follows a vicious circle of higher wages to meet higher cost, and increased cost as the result of higher wages ; and he asserted that the aim of Scientific Management was to make higher wages bring decreased cost.‡

* Marshall, *Industry and Trade*, p. 379.

† Taylor, *The Principles of Scientific Management*, p. 47. But it is fair to remark that there are different sizes of bricks, &c.

‡ Thompson, *Scientific Management*, p. 10.

Every system has its weak points, and Scientific Management is no exception to the rule. The most serious defect is that it tends to make the worker an automaton, performing mechanically certain movements which have been carefully thought out for him and afford no scope for independent judgment. His business is not to think or to use his brains, but simply to carry out his instructions. It is clear that work conducted under such conditions can have no educative influence on the character of the worker, or conduce to his general efficiency, and it is reasonable to ask whether the gain in increased production is worth the social cost involved in the loss of initiative. The view has recently been expressed that our object should be "to make the workman in the future more of a director of instruments than a labourer, and to unite hand and brain as of necessity implying each other. Monotony will, at least, be diminished when men feel that they have always to be thinking when they act."* This ideal is altogether on a different plane from that visualised in the new art of management, in which it is the function of the planning department to do the thinking for the men. The exponents of Scientific Management claim that it enables an intelligent labourer to perform much of the work now done by a mechanic, the latter being raised to a higher grade of work. But they have not satisfactorily met the criticism that the system fails to promote independence, self-reliance and originality in the worker, and treats him as "a mere instrument of production."

The notion is widely prevalent that the methods of Scientific Management exhaust the worker. Professor Marshall conceives that there is no good ground for the charge ; † the machine is working the whole time since everything is provided for the operative and the details are thought out beforehand ; the mechanic, therefore, loses no time and can give his entire attention to the

* Lord Leverhulme, *The Six-Hour Day*, p. xiii.

† *Industry and Trade*, p. 386.

machine. But the greater concentration thus demanded would seem to involve a greater nervous strain, and there is some reason to fear that the worker may become worn out before his time, unless the hours of labour are reduced.

The opposition of the trade unions to the movement is based partly on the grounds mentioned above, but it is also inspired by the conviction that "it makes collective bargaining practically impossible and destroys the union spirit and organisation." The piece-wage lists are fixed by industrial experts, not by the process of collective bargaining, and though the rates of remuneration may be higher than those ordinarily paid, there are obvious dangers in a system which concentrates all industrial knowledge and power in the hands of the experts. There is, for one thing, no guarantee against rate-cutting, unless, indeed, the unions have their own trained officials equipped with the knowledge possessed by the scientific experts. Not only is the principle of collective bargaining thus endangered, but the whole structure of trade unionism is liable to be undermined by the fact that the best workmen find their interests ranged on the side of their employers. A cleavage is thus made in the world of labour. "All of the best men" in the Midvale Steel Company, observes Taylor, "saw clearly that the success of a labour organisation meant the lowering of their wages in order that the inferior men might earn more, and, of course, could not be persuaded to join." This division of interests impairs the unity of the trade union movement, and weakens its effort to raise the whole level of working-class life.

It would be a mistake on the part of trade unions to oppose indiscriminately the body of doctrines termed Scientific Management; it would be wiser to choose the good and reject the doubtful. Much may be learnt with regard to shop management and economy of manual effort. The conception of functional foremanship, for example, is clearly a sound one, in so far as it makes for the smoother working of the industrial machine, preventing

waste of time and material, and bringing the operative into direct contact with competent technical guides. The workers, as a body, have the strongest possible interest in encouraging scientific methods of production, however earnestly a particular section may cling to the retention of traditional practices and trade usages.

CHAPTER V.

UNEMPLOYMENT AND OVERPRODUCTION.

Continuity of employment is the indispensable basis of social and economic welfare. In the Middle Ages, when the keynote of industry was stability rather than expansion, it was usual to engage workmen for very long periods ; sometimes for three or four years. In Yorkshire, down to the nineteenth century, it was not uncommon in the textile industries to hire journeymen for twelve months. Nowadays a man is taken on for the shortest period possible ; he is usually engaged by the week, or the day, or for a single job. The system has its advantages from the standpoint of the employer, who finds himself able to expand or contract his business freely according to the market for his goods, to take on men when trade is brisk, to dismiss them when trade is slack. The trade unions also prefer a system in which their power of declaring a strike and withdrawing men from industry is not limited by lengthy contracts of service, while their members find themselves at liberty to move readily from job to job and to seize new openings when they become available. But short-period engagements involve a serious loss of stability of every kind. The workman is always confronted with the menace of unemployment. He may be in work to-day, but he has no security that to-morrow he will not be unemployed. "We are willing to admit," declared the founders of the Amalgamated Society of Engineers in 1850, "that whilst in constant employment our members may be able to obtain the necessities of life. . . Notwithstanding all this, there is a fear always prominent in the minds of him who thinks of the future that it may not continue ; that to-morrow may see him out of employment, his nicely-arranged matters for domestic comfort overthrown,

and his hopes of being able, in a few years, by constant attention and frugality to occupy a more prominent position, proved only to be a dream." In a former chapter we have endeavoured to show the necessity of a living wage, but a minimum wage requires as its corollary reasonable security of employment. It is useless to fix standard rates of payment, if the average weekly earnings are considerably reduced by under-employment. In such circumstances the "living wage" becomes a transparent fiction. It is better for a man to receive a lower wage and be assured of constant employment than to receive a relatively high wage and be subject to irregularity of employment. It is extraordinarily difficult for anyone whose earnings are liable to fluctuate violently to cultivate sober and thrifty habits. Nothing conduces more to extravagance and irregular living than to earn good wages for a week or two, and then to earn nothing at all. Nor can a household be prudently conducted where the amount of the income is the least certain factor in the family budget.

No exact statistics are available as to the extent of the unemployment which occurs from year to year, but the *Minority Report of the Poor Law Commission* (1909) stated that "the mass of men, women and children, suffering from the privation due to unemployment in the United Kingdom amounts, *at the best of times*, to hundreds of thousands, whilst in years of trade depression they must exceed a million in number." So long as there is any possibility of unemployment, however small the actual percentage at the moment, the effects are bound to be demoralising. In the first place, no man knows when his turn may not come. The fact that thousands of men are out of work up and down the country incites their fellow-workers to resist new processes, and to refrain from increasing their output, for fear that they, too, will be thrown on the scrap-heap. In the second place, the charge of maintaining the unemployed is a drain upon the resources of the trade unions, so that every organised workman, however safe his own position, is adversely

affected by the growth of unemployment. Above all, the unemployed are a vital menace to the trade union principle of a standard rate. The employed unionist is confronted with the most insidious of all forms of industrial competition—the competition of the unemployed artisan who has to choose between starvation (or an inadequate insurance benefit) and accepting work below the standard rate. No trade union can feel absolute security that its hard-fought struggles to establish the principle of a living wage will not have been fought in vain so long as there exists any considerable degree of unemployment.

What are the causes of, and remedies for, unemployment? This is the most difficult of social questions, but we cannot evade it here, for it is intimately connected with the problem of increased production.

The popular explanation of unemployment traces it to machinery and changes in processes. Opposition to machinery was widespread during the early part of the nineteenth century. "Who does not consider the employment of machinery," asked a writer in *The Union Pilot*, "one of the greatest evils that ever befell the country?"* and the hostility here expressed has by no means completely died down. The introduction of machinery on a large scale no longer takes place since in all the great industries hand-processes have become nearly extinct, but changes are almost daily in operation; here a new machine is introduced; there a new process is developed; and the result is inevitably a certain re-arrangement, and not infrequently a displacement of labour. It is hardly necessary to-day to point out the benefits which have accrued from the use of machinery. It is well understood that machinery effects a great economy of labour, cheapens the price of commodities, stimulates the demand, and ultimately may provide more work than is at the moment displaced. This is true enough, but it is no consolation to the individual workman,

* Quoted in Chapman, *The Lancashire Cotton Industry*, p. 82.

whose skill is rendered useless by some technical development, to know that at some distant date more people will be found employment. In many cases a workman displaced in one branch of industry finds employment in another, but the older a man is, the less adaptable he tends to become, and the more difficult it will be for him to find work at his customary rates of payment. To resist new methods is undoubtedly anti-social, and a country which adheres to antiquated processes will soon be left behind in the industrial race: the hostility to machinery shown by textile workers in Norwich and the West of England was largely the cause of the decline of the woollen industry in those parts. Nevertheless, the individual workman who finds his livelihood menaced by some industrial change will continue to fight for his existence until some way has been discovered of effecting changes without requiring the immolation of industrial victims. "There cannot," said John Stuart Mill, "be a more legitimate object of the legislator's care than the interests of those who are thus sacrificed to the gains of their fellow-citizens and of posterity." When the community is prepared to undertake that no individual shall suffer from changes imperatively demanded in the common interest, it will then be in a stronger position to denounce the anti-social policy of blocking economic progress. The cost of supporting those "sacrificed to the gains of their fellow-citizens and of posterity" will be more than compensated for by the eager co-operation of labour in the adoption of the most up-to-date methods.

Many trades are seasonal in character, and here industrial fluctuations are inevitable. There are always times in the year when one trade is busy, another slack; for example, printing establishments are busiest about Christmas, and builders in the spring. It has been pointed out that seasonal fluctuations should be regarded as ultimately a question not of employment, but of wages. "From an economic point of view, no industry is self-supporting unless it pays wages sufficient to keep men not only while at work, but while they must stand idle.

They (should) average out to a sufficiency for the slack and busy months."* Unemployment in seasonal trades cannot be prevented, but its evils could be considerably mitigated if the demand for labour were better co-ordinated and the floating population made more mobile ; thus college servants find employment during the Long Vacation in seaside hotels.

Certain forms of unemployment are inherent in the industrial system. They would occur in a Socialist State, just as they do in our present Individualist State, though the methods of dealing with them would doubtless be different. Whatever the organisation of society there would be fluctuations in foreign trade due to circumstances over which the home Government could have no control, and a falling off in the demand for a commodity, whether due to changes in fashion, shortage of raw material, tariffs, or any other cause, would involve a reduction in the amount of employment. But one important cause of unemployment is the direct result of the existing competitive system. There is in England to-day not one great employer of labour, but an infinite number of employers, some large, some small ; and the demand of each of these employers for labour is never constant ; it is always expanding or contracting. This system makes unemployment inevitable, for where there is no co-ordination there can be no stability or security. Everything is necessarily in a state of flux. Whether the benefits of private enterprise are worth the price that must be paid for them is a question we have not here to discuss, but this particular aspect of unemployment could be greatly mitigated without seriously curtailing private enterprise.

The ordinary phenomena of unemployment do not attract much attention. The ebb and flow of labour due to changes in industry, seasonal fluctuations, and the lack of co-ordination among employers, appears an inseparable feature of the industrial system. But

* Beveridge, *Unemployment*, p. 37.

the phenomenon of a trade depression, when the usual distress caused by unemployment is aggravated in a marked degree, at once seizes upon the popular imagination. The most potent objection to increased production at all times is the dread that increased production will lead to overproduction, followed by a slump in trade and the closing down of factories and workshops. What, then, is the cause of trade depressions?

Numerous attempts* have been made to account for the "cycle of trade" in which a boom is followed by a slump, and a slump gives way to another boom. Certain theories are manifestly incorrect, for example, industrial depressions are not confined to countries which have either free trade or protection. If we follow the course of a cyclical fluctuation, our analysis of events may serve to elucidate the economic factors involved.

We will take as our starting-point a boom in trade. The boom itself may be due to various causes. The famous "sun-spot" theory of W. S. Jevons sought to establish a connection between commercial crises and the recurrence of sun-spots which affect the harvests, and critics of the theory, who point out that sun-spot fluctuations do not exactly coincide with industrial depressions, are apt to overlook the essential fact that nature's bounty does vary considerably from year to year, and this reacts upon the volume of trade. The grain crops of 1902 exceeded those of 1901 by 2,500 million bushels, the equivalent of £250,000,000. The increase in crops necessitates an increase in transport, and so produces a boom in shipbuilding. Capitalists are encouraged to sink capital in corn-producing countries, and this means a demand for machinery and other instruments of production. Above all, the fall in wheat prices leaves the working-classes with a larger margin for expenditure on clothing, furniture, and other commodities, and so stimulates production in all these various

* See Beveridge, *Unemployment*; Burton, *Financial Crises and Periods of Industrial and Commercial Depression*; Robertson, *A Study of Industrial Fluctuation*.

directions. The bounty of nature need not be the only factor in bringing about a boom. Industrial fluctuations are often attributed to a rise in prices following upon an increase in the supply of precious metals, but precious metals are not to-day the principal instruments of exchange, nor do variations in the quantity of gold coincide with cyclical fluctuations. Whatever the cause of the boom, and the psychological factor—a wave of buoyancy succeeding depression—plays its part, producers eagerly strive to meet the growing demand. A period of prosperous trade sets in, employment is good, and feverish activity reigns in place of stagnation. Every manufacturer becomes anxious to make hay while the sun shines, orders keep pouring in, and he has no means of gauging the extent or duration of the market, while above all he does not know what preparations are being made by his competitors. In his ignorance he is bound to overreach himself; for example, if a million articles are required and there are a thousand makers, each one of them will probably produce on an average not a thousand articles, but at least two thousand, and so the market will become overstocked. In the case of boots, clothing, and similar commodities—what are known as “consumer’s goods,” things consumed directly—evidence of overproduction soon becomes apparent. But during the period of prosperity a great deal of capital is invested in the manufacture of “producer’s goods,” instruments of production, such as ships, factories, machinery, and rolling-stock. These take longer to produce, other investors are tempted to plunge heavily, and evidence of overproduction in these directions only becomes apparent at a much later date. There is thus an excess of “producer’s goods”—new factories, workshops, and mines; the supply of goods is greater than the market can absorb, the banks begin to restrict credit, and a psychological reaction ensues in which panic soon reigns supreme. We now inquire why consumers are unable to purchase the commodities with which the market has become glutted. In this connection the

theory of "Under-Consumption" becomes relevant.* Owing to the uneven distribution of wealth, one section of the community has more than it can spend, and so compulsorily saves the surplus, and devotes it in the form of capital to increased production. The other, and more numerous, section is unable to purchase the commodities thus produced, owing to insufficient power of spending. In other words, under-consumption of the workers checks the circulation of commodities and so produces the phenomena of overproduction. The wholesalers and retailers are stocked with goods which they are unable to dispose of at remunerative prices, and the factories close down because no orders are coming in from the wholesalers and retailers. Many thousands of men are thrown out of employment, and their "effective demand" for commodities is still further reduced. This falling off in the demand reacts upon other industries, and so the crisis in trade becomes general. After holding out for high prices the shops endeavour to attract buyers by lowering prices, and in this way the surplus goods are eventually absorbed by the market. Meanwhile machinery is getting worn out and needs to be replaced, and this, coupled with the stimulus of a reviving demand, makes trade once more brisk. Credit again becomes available, buoyancy succeeds panic, and the wheel has come full circle.

It has been argued that cyclical fluctuations of trade are not without economic justification. "When trade expands new factories are built. When trade contracts it is the old and relatively obsolete factories that have to close." Thus "fluctuation appears bound up with material progress. Each wave leaves wages higher and prices lower, and productivity greater, than did the wave before." It may be questioned, however, whether the suffering caused to the community by trade crises, added to the waste involved in producing an excess of "producer's goods," does not outweigh the gain which may accrue from this anarchical scramble of

* See p. 25-6.

the fittest—and least scrupulous—to survive. It may be reasonably contended that in the economic sphere, as in other departments of social life, man has outgrown the wasteful methods of primitive evolution. There is no apparent reason why law, and the ordered liberty that springs from law, should be excluded any longer from the business activities of mankind.

Various attempts have been made in the past to cope with the problem of the unemployed, but the remedies were at best palliatives. Municipalities have opened relief works, charitable funds have been raised, the aid of the poor law guardians has been invoked, the Unemployed Workmen's Act has been put into operation, but none of these things represents anything more than an attempt to relieve the distress arising from unemployment—and even this is effected very inadequately. The root causes of unemployment itself are left unaffected. Much was expected from Labour Exchanges as a means of organising the labour market and introducing order into the present industrial anarchy, but their activities needed to be supplemented by other agencies. In the *Minority Report of the Poor Law Commission* (1909),* it was suggested that the Government could do a great deal to regularise the aggregate demand for labour over a long period by a more deliberate arrangement of its orders for work of a capital nature. The orders of the Admiralty and the War Office, where they were not urgent, the construction of Government offices, the rebuilding of schools, and so forth, could all be taken in hand as the index number of unemployment reached the warning point. "Even the Stationery Office would get on two or three times as fast as usual with the printing of the volumes of the Historical Manuscripts Commission and the publication of the national archives." The important point in connection with this proposal is that it does not contemplate anything in the nature of relief works, which are sometimes demoralising and always

* Pp. 658-9.

expensive. There would be no employment of the unemployed as such ; the work would be done in the ordinary way, but the labour market would be steadied by reserving public work as much as possible for the lean years of employment. Afforestation is another method of dealing with unemployment. It is work of vital importance to this country, the neglect of which will be gravely injurious to posterity, and it can be carried on to a large extent when trade is slack. All these proposals are excellent in their way, but something more is needed to remove the sense of insecurity which at present prevails in every wage earner's home, namely, a State guarantee against destitution.

To appreciate the importance of a State guarantee against destitution, it is well to consider briefly the effects of unemployment upon the character of the individual affected. The unemployed easily become the unemployable. "The enforced idleness on completion of a job naturally throws the men upon their own resources, which is, in nine cases out of ten, the nearest public-house. The frequent change from strenuous hard work to absolute indolence with men of this character naturally tends to gradual moral and physical degeneration, and ultimately the individual becomes unfit for work, even when opportunity offers." Mr. Webb aptly compares the deterioration which unemployment causes in the human material with the result of "turning machinery into the streets to be rained upon, so that it was found rusty and unserviceable when orders came." Everyone can grasp the folly of letting machinery go to rack and ruin, but the folly of permitting a workman to lose his industrial efficiency is not so readily appreciated. The difference of treatment lies in the fact that the machine is privately owned, whereas the workman is wrongly presumed to be a free agent, master of his own destinies.

The wealth of a country lies primarily in the capabilities of its people. A land which abounds in natural resources, but whose population is sluggish and backward, will be poor compared with a land whose natural resources

are inferior, but whose inhabitants are full of vitality. Anything which adds to the efficiency of labour increases the national dividend, anything which impairs efficiency diminishes the national dividend. It follows, therefore, that no community can afford to allow its members, through no fault of their own, to lose their power of producing wealth. Nor ought we to forget the humanitarian aspect of the problem or the fact that the fear of destitution hinders the co-operation of labour in the work of production.

A workman's individual savings are seldom sufficient to tide him over a period of unemployment. His wages, as a rule, leave no adequate margin for this purpose, and though thrift has its virtues, it would be false economy to go underfed and under-clothed in order to save up for a rainy day; indeed, it is more likely to hasten the advent of unemployment by impairing the physical vigour of the workman. To relieve the distress arising from unemployment, some form of State Insurance is indispensable.* Many trade unions provide unemployment benefits, but apart from the fact that the allowance is insufficient to maintain a family, the unions do not yet embrace all the workers in the country.

We do not propose to elaborate here any scheme of State Insurance. We admit that the whole subject bristles with difficulties. Should insurance be universal and compulsory, or simply voluntary? If the latter, should the State furnish assistance—as the public authorities do at Ghent; if the former, should employers be forced to contribute, or should the whole burden be borne by the State, or shared between workmen, their employers, and the State? What precautions are to be taken against malingering? Are men to be permitted in all cases to refuse work which is not paid at trade union rates? And, perhaps, most difficult of all: what allowance ought to be paid to the unemployed?

* In some cases where the industry is highly organized (e.g. in the cotton industry) a solution may be found on the lines of the industry bearing the responsibility for its own unemployed.

If he receives less than his normal earnings, he will be penalised owing to no fault of his own, his physical vigour will suffer, and his family, from which the next generation of workers is recruited, will be inadequately nourished. All these problems have to be faced, but they do not prove that State Insurance is impracticable. There is nothing perfect under the sun, and it is no valid argument against an institution to say it has defects. The crucial point is whether the social and economic gain anticipated from a proposed change outweighs the possible social and economic loss involved. A system of State Insurance may afford some loopholes, but in its absence no amount of theoretical argument will persuade the workers to co-operate wholeheartedly in the work of production nor relieve them from the nightmare of unemployment. And the difficulties are not so great as they seem at first sight. The primary object of insurance would be defeated, unless the principle is frankly accepted that the amount of the contribution must be sufficient to provide at least for rent, food, clothing and firing. A check on its administration could be devised on the lines of the Strassburg Labour Office, where the unemployed, in receipt of an allowance, have to register daily and must take on any suitable work at current rates of wages, on pain of forfeiting their claim to relief. This meets the argument that it is necessary to deter applicants for relief in order to prevent abuses. Such a policy is almost as unwise as deterring a sick workman from stopping work. The primary duty of the State is to prevent the physical and mental deterioration of its citizens, whether the cause is due to illness or involuntary unemployment, and it is just as important to safeguard a workman from losing his physical vigour, as it is to restore it to him after he has lost it.

BIBLIOGRAPHY.

Beveridge, Sir W. H. *Unemployment: a Problem of Industry*. Longmans.
Booth, Charles. *Life and Labour in London*. Macmillan. 16 vols.
7s. 6d. net each.

Bowley, A. L., and A. R. Burnett-Hurst. *Livelihood and Poverty*.
Bell. 4s. net.

Brassey, Earl. *Work and Wages*. Longmans. 5s.

Bulkley, M. E. *Minimum Rates in the Box-Making Industry*. Bell.
1s. 6d. net.

Burton, T. E. *Financial Crises and Periods of Industrial and Com-
mercial Depression*. Appleton. 10s. 6d.

Chapman, Sir S. J. *The Lancashire Cotton Industry*. Manchester
University Press. 9s. net.
Work and Wages. Longmans. Part I.—Foreign Competition.
8s. 6d. net. Part II.—Wages and Employment. 12s. net.
Part III.—Social Betterment. 10s. net.

Cole, G. D.H. *Chaos and Order in Industry*. Methuen. 7s. 6d. net.
Labour in War-Time. Bell. 5s. net.
Self-Government in Industry. Bell. 5s. net.

Douglas, C. H. *Credit-Power and Democracy*. Cecil Palmer. 7s. 6d. net.
Economic Democracy. Cecil Palmer. 6s. net.

Fay, C. R. *Co-Partnership in Industry*. Cambridge University Press. 2s.

Hall, Sir A. D. *A Pilgrimage of British Farming, 1910-1912*. Murray
7s. 6d. net.

Hobson, J. A. *The Problem of the Unemployed*. Methuen. 5s. net.

Hodges, F. *Nationalization of the Mines*. Leonard Parsons. Ltd.
4s. 6d. net.

Jevons, H. S. *The British Coal Trade*. Kegan Paul. 8s. 6d. net.

Leverhulme, Lord. *The Six-Hour Day and Other Industrial Questions*.
Allen & Unwin. 12s. 6d. net.

Macrosty, H. W. *The Trust Movement in British Industry: a Study
of Business Organization*. Longmans. 10s. net.

Marshall, Alfred. *Industry and Trade: a Study of Industrial
Technique and Business Organization*. Macmillan. 18s. net.
The Principles of Economics. Macmillan. 12s. 6d. net.

Pigou, A. C. *Wealth and Welfare*. Macmillan. 10s. net.

*Report of the Ministry of Munitions on Industrial Fatigue and its
Causes*. Cd. 8213 (1916).

Report of the Committee on Trusts. Cd. 9236 (1919).

Report on Profit-Sharing. Cd. 544 (1920).

Rowntree, B. S. *Poverty*. Nelson. 1s. 3d. net.

Schloss, D. F. *Methods of Industrial Remuneration*. Williams &
Norgate, 1898. Out of print.

Tawney, R. H. *Minimum Rates in the Chain-Making Industry*. Bell.
3s. 6d. net.

Minimum Rates in the Tailoring Industry. Bell. 1s. 6d. net.

Taylor, F. W. *The Principles of Scientific Management*: Harper & Bros.
1911.

*Two Papers on Scientific Management: a Piece-rate System, and
Notes on Belting*. Routledge. 5s. net.

Shop Management. Harper & Bros. 1911.

Thompson, C. B. *Scientific Management*. 1916. Milford. 19s. net.

Webb, Sidney and Beatrice. *Industrial Democracy: a Study in
Trades Unionism*. Longmans. 12s. 6d. net.



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